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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,188	08/27/2003	Masayuki Mamoto	70594-025	3518
7590	02/13/2006		EXAMINER	
McDermott, Will & Emery 600 13th Street, N.W. Washington, DC 20005-3096				BUSS, BENJAMIN J
			ART UNIT	PAPER NUMBER
				2129

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/648,188	MAMOTO ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Benjamin J. Buss	2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 8/27/2003 and 4/13/2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1 and 2 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)              |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____.  |

**DETAILED ACTION**

This action is responsive to application 10/648,188 filed 8/27/2003. Claims 1-2 are pending and have been examined. An action on the merits of these claims appears below.

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***Priority***

Applicant's claim for the benefit of application 2002-249441 filed in Japan on 8/28/2002 under 35 U.S.C. 119(e) is acknowledged.

***Information Disclosure Statement***

- 10 No Information Disclosure Statement (IDS) has been filed with this application. Applicant is reminded of the duty of all individuals associated with the filing or prosecution of a patent application to disclose all information known to be material to patentability. This duty to disclose extend to each inventor named, each agent or attorney involved, and every other person involved who is associated with the inventor, assignee, or anyone to whom there is an obligation to assign the application. See 37 CFR 1.56 and
- 15 MPEP Chapter 2000 for more information.

***Drawings***

- The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is required in correcting any errors of which applicant may become aware in the drawings.

***Specification***

- The specification have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is required in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

Claims 1 and 2 are objected to because of the following informalities:

- In claim 1, lines 3-4, change "the contents" to -- a contents --.
- 30 In claim 1, lines 4-5, change "the level of skill of the user" to -- a level of skill of the user --.
- In claim 1, line 6, change "a knowledge providing apparatus" to -- the knowledge providing apparatus --.
- In claim 1, lines 8-9, change "the current level of skill" to -- a current level of skill --.
- 35 In claim 1, line 10, change "the history of the work performed by the user" to -- a history of the work performed by the user --.
- In claim 1, line 14-15, change "the basis of the complexity" to -- a basis of a complexity -- or -- based on a complexity --.
- In claim 1, line 16, change "the evaluation" to -- the judging -- or -- an evaluation --.
- 40 In claim 1, lines 16-17, change "the number of times of keyword retrieval" to -- a number of times of keyword retrieval --.
- In claim 1, line 19-20, change "the history of the work performed in the past by the user" to -- a history of the work performed by the user in the past --.
- In claim 2, line 4, change "a knowledge providing apparatus" to -- the knowledge providing apparatus --.
- 45 In claim 2, line 7, change "said work" to -- said predetermined work --.
- In claim 2, line 9, change "the basis of access" to -- a basis of access -- or -- based on access --.
- In claim 2, line 10, change "the basis of the read knowledge" to -- a basis of the read required information -- or -- based on the read required information --.
- In claim 2, line 15, change "the name of work" to -- a name of the work --.
- 50 In claim 2, line 15, change "the contents of the work" to -- a contents of the work --.
- In claim 2, line 16-17, change "the reason why the undesirable results occur" to -- a reason why the undesirable results occur --.
- Appropriate correction is required.

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***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 60 Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the results of the work" in line 16. There is insufficient antecedent basis for this limitation in the claim.

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***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- 70 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Cook (USPN 5,727,950).

***CLAIM 1:***

- 75 As per claim 1, Cook discloses:

A user information database storing for each user the current level of skill in said work of the user and information related to the history of the work performed by the user (C5-63 especially "From the student, it accepts direct interactions as well as using the history of previous student performance stored in a student data object" C5 L40-45 and

- 80 "These reports include the unique data on the student's pedagogic performance accumulated and analyzed by the agent, as well as all the usual and expected performance data on specific materials available in existing computer-assisted instruction systems. In a preferred embodiment this data is derived

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from the student data object, where all permanent student data is stored.

85 These data objects are preferably stored in an object oriented database system against which are run reports of this data" C7 L45-55 and "In an preferred embodiment, the student data object 109 collects all the permanent data about the student maintained by the ABI system. The data objects for all the students are collected for permanent storage in a database system.

90 Preferably, this is an object oriented database, although this data can be advantageously stored in standard relational databases" C14 L64-C15 L3 and "One student data object is created for each student in the ABI system and is the only permanent repository of data concerning that student. The student data comprises fixed data defining the student as well as evolving data describing 95 the student's interaction with the system, the latter including current and past performance and data defining the agent's view of the student. The student data object is stored on the server system and is the source on the server system for all teacher and administrative reports concerning that student" C48 L20-30 and "milestone data establishing objectives already met by 100 the student, data relating to the student's progress in the materials, data relating to the student's use of tools in the materials, and performance data" C49 L1-10); and

Means for judging (C5-63 especially "judging student inputs" C32 L10-15 and C32 L45-60), when said predetermined work performed by an arbitrary user is terminated (Figure 11 especially 105 "Exercise-done"), the level of skill of the user again to update the current level of skill of the user in the user information database on the basis of the complexity of the contents of the work, information related to the evaluation of the results of the work, the number of times of keyword retrieval performed by the user during the work, the current level of skill of the user, and information related to the history of the work performed in the past by the user (C5-63 especially "Student-Data Object: data about each 110 student which the agent software references in order to provide responsive,

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adaptive, and individualized instruction to that student; this data is updated during course of each lesson and is advantageously stored as one object, or alternatively a few linked objects, in the ABI system" C10 L15-25 and "Meta-requests include student questions to the agent—for example: How am I 115 doing? What should I do next? Could you say that another way?—or student requests—for example: I need a hint; I need help" C13 L15-25 and "When these notation are referenced, called, or executed, important variables and parameters educationally relevant at this significant point are gathered into a message, along with an indication of the type of the educational event.

120 These messages are events which are then sent to the agent. For example, an educationally significant point is the beginning of a new instructional sequence. The corresponding event message can include an indication of the topic to be covered, the expected level of difficulty, the expected time to complete, and the educational paradigm adopted. Another educationally 125 significant point is the receipt of a wrong answer" C13 L35-55 and "As depicted by arrow 110, the data object is referenced by the agent in order to generate its actions and is updated by the agent as it processes events and student meta-requests" C15 L10-25 and "short term measures of performance—such as error rates, weighted moving averages of error rates, and the use of hints and 130 retries" C49 L 22-40 and "the data referenced and updated by the agent are averages or weighted moving averages, giving more weight to recent than past behavior. Thus, the pedagogic model includes, for example, data weighted moving averages of the rates that the student learns discrimination of a certain complexity" C62 L65-C63 L8; Also see Figure 11 especially "Exercise-done", 135 "Difficulty", "Use of tools", "Use of hints", "Performance Milestone", etc.). Examiner notes that meta-requests for hints/help are substantially the same as keyword retrieval in the broadest reasonable interpretation of the claim.

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**CLAIM 2:**

As per claim 2, Cook discloses:

140        A knowledge database storing knowledge for supporting said work performed by the user (C5-63 especially "the ABI system through its network, software and database acts as the student's virtual tutor" C14 L30-55 and "Instructional materials databases 240" C18 L10-40 and "agent can meaningfully track student performance and provide helps, hints, and remediation" C32 L30-45; Figure 1 especially "Instructional Materials 145 Data"; Figure 2A especially "Instruction materials software"; Figure 2B especially "Database for software and materials"); and

Means for reading out required information from the knowledge database on the basis of access from the user terminal, generating display data on the basis of the read knowledge, and transmitting the generated display data to the user terminal (C5-63 especially "The materials data includes 150 display objects containing the substance of the instruction, logic to sequence the display according to student input, and notations" C7 L1-10; "At educationally significant points, as the materials sequencing logic presents display objects to the student and receives inputs from the student" C13 L35-40; and "FIG. 4 further illustrates an exemplary screen interaction between the 155 materials and the agent. FIG. 4 shows only the content of materials area 501 and on-screen agent area 502 of the complete display screen of FIG. 3. A mathematics homework material is displaying item presentation 503 with input selection buttons. The student has selected wrong input button 504. At this educationally significant event, the materials send to the agent several 160 messages generated by notations in the materials data. In response, the student's agent has chosen to act as illustrated. First, it displays text 506 of the rule violated by the student answer. This text was sent to the agent by the materials in an event message for its use. Second, the on-screen agent points 505 to the screen location of the error. This location was also sent

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165 to the agent by the materials. Third, perhaps in response to a previous high or increasing error rate of the student, the on-screen agent presents a meta-response 508 commenting on the pedagogic nature of the student's error. Further, it activates a persona 507 to engage the student's attention. This persona can advantageously include animation, audio, and speech output of the 170 displayed text. Thus, the agent software integrates speech utterances, visualization, display of text and graphics, and animation into a persona display for highlighting an educational event that the agent determined important based its processing of the current input, past student inputs in this lesson, and the student's pedagogic model generated over several 175 sessions" C26 L30-65; Figure 2A especially "Student client"; Figure 2B especially "Operating system Network, and File server"; Also see the graphical user interface in Figure 3 and Figure 4),

The knowledge database storing for each work item in a predetermined unit: the name of work (C5-63 especially "names for this task and exercise" C32 L25-45), the contents of the work 180 (C5-63 especially "Materials Data: the content of instructional materials" C9 L55-65 and "Materials engine 102 presents educational content such as instructional units, homework assignments, and testing to student 101. The educational content includes instructional materials data 114, communications materials data 104, and tools data 115 instructional materials data 114 include 185 computer based instructional materials similar to those known in the art" C10 L55-67 and "specified contents, perhaps scrollable, displayed by a particular instructional material" C37 L1-5), and know-how in the work (C5-63 especially "skills to be acquired" C32 L25-45 and "hints" C32 L25-45) as well as undesirable results in a case where the know-how in the work is not used and the reason why the undesirable results occur (C5-63 especially 190 "Another educationally significant point is the receipt of a wrong answer. In response, the materials can generate several messages: a first message can

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include the time required to make the answer, an indication of the type of error, and an indication of whether the answer is completely wrong or only a near miss; a second message can include text parameters ("say-it" type message) if the agent chooses to make a specific text or spoken comment about the error; finally, a third message can include the screen location best representing the error ("point-it" type message) to use if the on-screen agent chooses to point to the error or move to the location of the error" C13 L25-67 and "skills to be acquired" C32 L25-45).

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***Claim Rejections - 35 USC § 102***

Claim 2 is also rejected under 35 U.S.C. 102(b) as being anticipated by Tillotson (USPN 3,210,864).

***CLAIM 2:***

As per claim 2, Tillotson discloses:

205        A knowledge database storing knowledge for supporting said work performed by the user (C1-14 especially "electronically recording a selected testing or teaching program including questions together with coded answers to the questions" C1 L10-25); and  
            Means for reading out required information from the knowledge database on the basis of access from the user terminal, generating display data on the basis of the read knowledge, and transmitting the  
210     generated display data to the user terminal (C1-14 especially "reproducing the testing or teaching program for audible or pictorial reception by a person to be tested or taught who is provided with multiple choice answers" C1 L10-25),

            The knowledge database storing for each work item in a predetermined unit: the name of work, the contents of the work, and know-how in the work as well as undesirable results in a case where the  
215     know-how in the work is not used and the reason why the undesirable results occur (C1-14 especially "if the person has given an incorrect answer, special reinforcing material is given to the student carefully explaining to him what answer he should have made and why. Such reinforcing material may be ... In case the student

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selected the correct answer, the reinforcing material is omitted and the  
220 correct counter advances" C5 L42-57).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Suleiman (US Patent Application Publication 2004/0014021) discloses evaluating children for  
225 school readiness using a computer-based artificial intelligence apparatus which evaluates student based on a database that is constantly updated, challenging the child to play a series of games, and processing the child's performance data compared to the performance results of the population, and evaluating the child using a genetic algorithm. The child's score is penalized when a Help button is pressed, and they can be a maximum allowable number of times a request for help is permitted.

230 Hoyashita (USPN 6,865,368) discloses a system producing educational material for students which is customized to each student by inputting student-related data such as learning ability, learning history, level of autonomy, etc. One aspect of the provided educational material may be hints such as keywords and URLs for serving as a useful reference. The system stores a variety of data, including learning outcomes about students, lesson histories of every student, etc.

235 Thomas (USPN 6,086,382) discloses a computer based method for improving the performance of a student in taking standardized exams. The system prompts the examinee with questions and explains why the answers given are correct or incorrect once the student responds to each question.

Nichols (US Patent Application Publication 2001/0016839), Gray (USPN 6,944,596), Bertrand (USPN 6,745,170), and Beams (USPN 6,699,513) disclose goal based learning systems that analyze  
240 results in a cognitive educational experience, providing the user with feedback to help the learner understand mistakes made such that the educational experience is improved.

Trif (USPN 5,870,731) discloses an adaptive problem solving system which provides different levels of responses for "Why" messages to help users of varying competencies effectively and efficiently learn from mistakes made.

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***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Buss whose telephone number is 571-272-5831. The examiner can normally be reached on M-F 9AM-5PM.

250        If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on 571-272-3080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from 255 either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Benjamin J Buss  
Examiner  
Art Unit 2129

  
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